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APPENDIX A
PENDING CLAIMS

1. (previously once amended) A method for identifying a compound that modulates signal transduction in sensory cells, the method comprising the steps of:
 - (i) contacting the compound with a sensory cell specific G-protein alpha subunit polypeptide, the G-protein alpha subunit polypeptide comprising greater than 70% amino acid sequence identity to a polypeptide having a sequence of SEQ ID NO:2; and
 - (ii) determining a functional effect of the compound upon the G-protein alpha subunit polypeptide, thereby identifying a compound that modulates signal transduction in sensory cells.
2. (as filed) The method of claim 1, wherein the G-protein alpha subunit polypeptide specifically binds to polyclonal antibodies generated against SEQ ID NO:2.
3. (as filed) The method of claim 1, wherein the G-protein alpha subunit polypeptide is recombinant.
4. (as filed) The method of claim 1, wherein the functional effect is a chemical effect.
5. (as filed) The method of claim 1, wherein the functional effect is a physical effect.
6. (as filed) The method of claim 1, wherein the functional effect is determined by measuring binding of radiolabeled GTP to the G-protein alpha subunit polypeptide or to a G protein comprising the G-protein alpha subunit polypeptide.

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7. (as filed) The method of claim 1, wherein the G-protein alpha subunit polypeptide is from a mouse, a rat or a human.

8. (as filed) The method of claim 1, wherein the G-protein alpha subunit polypeptide comprises an amino acid sequence of SEQ ID NO:2.

9. (as filed) The method of claim 1, wherein the G-protein alpha subunit polypeptide is expressed in a cell or a cell membrane.

10. (as filed) The method of claim 9, wherein the functional effect is measured by determining changes in the electrical activity of cells expressing the G-protein alpha subunit polypeptide.

11. (as filed) The method of claim 10, wherein the changes in electrical activity are measured by an assay selected from the group consisting of a voltage clamp assay, a patch clamp assay, a radiolabeled ion flux assay, or a fluorescence assay using voltage sensitive dyes.

12. (as filed) The method of claim 9, wherein the functional effect is determined by measuring changes in the level of phosphorylation of sensory cell specific proteins.

13. (as filed) The method of claim 9, wherein the functional effect is determined by measuring changes in transcription levels of sensory cell specific genes.

14. (as filed) The method of claim 9, wherein the functional effect is determined by measuring changes in intracellular cAMP, cGMP, IP3, DAG, or Ca²⁺.

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15. (as filed) The method of claim 14, wherein the changes in intracellular cAMP or cGMP are measured using immunoassays.

16. (as filed) The method of claim 9, wherein the cell or cell membrane is attached to a solid substrate.

17. (as filed) The method of claim 9, wherein the cell is a eukaryotic cell.

18. (as filed) The method of claim 17, wherein the cell is a human cell.

19. (as filed) The method of claim 18, wherein the cell is an HEK 293 cell.

20. (as filed) The method of claim 9, wherein the G-protein alpha subunit polypeptide is co-expressed with GPCR-B3 or GPCR-B4.

21. (as filed) The method of claim 1, wherein the G-protein alpha subunit polypeptide is linked to a solid phase.

22. (as filed) The method of claim 21, wherein the G-protein alpha subunit polypeptide is covalently linked to the solid phase.

23. (as filed) A method for identifying a compound that modulates sensory signaling in sensory cells, the method comprising the steps of:

(i) expressing a sensory cell specific G-protein alpha subunit polypeptide in an HEK 293 host cell, wherein the G-protein alpha subunit polypeptide comprises greater than 70% amino acid sequence identity to a polypeptide having a sequence of SEQ ID NO:2;

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(ii) expressing a sensory cell specific G-protein coupled receptor in the host cell;

(iii) contacting the host cell with the compound that modulates sensory signaling in sensory cells; and

(iv) determining changes in intracellular calcium levels in the host cell.

24. (as filed) The method of claim 23, wherein the sensory cell specific G-protein coupled receptor is GPCR-B3 or GPCR-B4.